



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,639	04/13/2001	Serguei Zhdanok	000348-263	3068

7590

09/16/2003

E. Joseph Gess  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404

EXAMINER

LANGEL, WAYNE A

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 09/16/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

833639

Applicant(s)

Zhdanov et al

Examiner

Langel

Group Art Unit

1754

--The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address--

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

☒ Responsive to communication(s) filed on 8-4-03

☒ This action is **FINAL**.

- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

☒ Claim(s) 1-19 is/are pending in the application.

Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☒ The drawing(s) filed on 4-13-01 is/are objected to by the Examiner are approved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some\* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other \_\_\_\_\_

Office Action Summary

Art Unit 1754

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 10, 13, 14, 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tonkovich et al. Tonkovich et al. is relied upon as discussed in the last Office action. It would be prima facie obvious to carry out the process of Tonkovich et al. on a continuous basis, since it is well within the expected skill of the technician to operate a process continuously. In re Dilnot, 138 USPQ 248, 252. It would also be obvious to employ the process of Tonkovich et al. for the partial oxidation of hydrocarbons, since Tonkovich et al. teach at column 3, line 54 and column 6, line 28 that the process may be employed for partial oxidation. The porous medium of Tonkovich et al. would inherently be "preheated beforehand" in a continuous partial oxidation process, since the exothermic heat of reaction from the partial oxidation would heat the porous medium. Applicant's argument, that Tonkovich et al. does not disclose or suggest that the introduction of a reaction gas mixture into a

Art Unit 1754

porous medium results in heating the reaction gas mixture by heat exchange with the porous medium to a temperature sufficient to initiate combustion reaction, is not convincing, since applicant has not explained why the porous medium of Tonkovich et al. would not inherently heat the reaction gas mixture by heat exchange with the porous medium to a temperature sufficient to initiate a combustion reaction, when employing the process of Tonkovich et al. for partial oxidation, since the exothermic heat of reaction from the partial oxidation step would heat the porous medium which in turn would heat the incoming reactants in a continuous process. Applicant's argument, that Tonkovich et al. disclose placing the microchannel thereof within a tube furnace to provide the required endothermic reaction heat, is not convincing, since Example 1 of Tonkovich et al., which has to do with the tube furnace, exemplifies methane steam reforming. There is no disclosure or suggestion in Tonkovich et al. to employ a tube furnace when using the process for partial oxidation, presumably since one of ordinary skill in the art would recognize that such a tube furnace would not be necessary for partial oxidation, in that the exothermic heat of reaction from the partial oxidation would obviously be sufficient to heat the porous medium. The porous medium of Tonkovich et al. would require an external heat supply when used for partial oxidation to no greater extent than would the process recited in applicant's claim 18.

Claims 1-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is indefinite as to whether the claim embraces a situation in which the medium capable of releasing oxygen is introduced into the porous medium along with the hydrocarbon, or whether the claim is limited to only the oxygenated medium and hydrocarbon being so introduced, since lines 1-3 of claim 1 recite that the process comprises "partially oxidizing a hydrocarbon by an oxygenated medium 'or a medium capable of releasing oxygen'", but line 8 of claim 1 requires that the reaction gas mixture which is introduced into the porous medium must comprise the hydrocarbon and the oxygenated medium (versus the hydrocarbon and the medium capable of releasing oxygen).

Claim 18 is rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no "description support" in the original specification for carrying out the process on a continuous basis, or for the porous medium not being heated by an external heat supply.

Art Unit 1754

Applicant is invited to point out where in the specification support exists for such limitations.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

Serial No. 09/833,639

-6-

Art Unit 1754

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

September 15, 2003

  
WAYNE A. LANGEL  
PRIMARY EXAMINER